

What is claimed is:

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9. An orthopedic surgical instrument for resection of a distal end of a femur and a proximal end of an adjacent tibia in preparation for implantation of an orthopedic joint replacement, the instrument comprising:

- (a) an intermedullary support comprising an alignment rod having a tapered portion terminating at a first end thereof and defining a longitudinal axis therethrough, the rod axially insertable into the distal medullary cavity of the femur and having an outer surface adapted to engage the femur whereby the rod is alignable within the femur and provides a surgical reference point, the rod having a second end extending a distance beyond the distal femur;
- (b) a cutting guide adjustably mountable to the second end of the rod and positionable about the distal end of the femur, the cutting guide having a plurality of femoral blade slots therethrough, each femoral blade slot adapted to operatively receive a blade whereby the blade is guided to perform osteotomies;
- (c) a tibial guide adjustably mountable to the second end of the rod and positionable about the proximal end of the tibia, the tibial guide having a plurality of tibial blade slots therethrough, each tibial blade slot adapted to operatively receive a blade whereby the blade is guided to perform osteotomies; and
- (d) a tibial locking arm slidably movable along the tibial guide and adapted to engage the proximal end of the tibia whereby the tibia is secured perpendicular to the femur.

10. The instrument of claim 9, wherein the tapered portion of the rod defines a plurality of longitudinal slots therethrough positioned radially thereabout, and wherein the

support further comprises a plurality of longitudinal roller bearings and a shaft located in the rod, each roller bearing located in a longitudinal slot and movable therein between a collapsed position and an expanded position wherein at least a portion of each roller bearing extends beyond the outer surface of the rod in the expanded position, the shaft axially drivable in the rod and adapted to engage the roller bearings, wherein axial advancement of the shaft moves the roller bearings to the expanded position thereby extending the roller bearings into the femur whereby the support is anchored therein in coaxial alignment therewith, and wherein axial retraction of the shaft moves the roller bearings to the collapsed position thereby releasing the roller bearings from the femur whereby the rod is axially removable from the femur.

11. The instrument of claim 9, wherein the cutting guide comprises a guide member mountable on the support and a posterior template slidably positionable along the guide member, the guide member and the posterior template having femoral blade slots positionable adjacent the distal femur whereby the blade is guided to perform osteotomies.

12. The instrument of claim 11, wherein the cutting guide further comprises a posterior gauge capable of measuring the position of the posterior template.

13. The instrument of claim 12, wherein the cutting guide further comprises a distal template slidably positionable along the guide member, the distal template having femoral blade slots positionable adjacent the distal femur whereby the blade is guided to perform osteotomies.

14. The instrument of claim 13, wherein the cutting guide further comprises a distal gauge capable of measuring the position of the distal template.

15. The instrument of claim 9, wherein the tibial guide comprises an elongate body member and a tibial template slidably positionable thereon, the body member adjustably mountable to the second end of the rod and positionable about the proximal end of the tibia, the tibial template positionable about the proximal end of the tibia and having tibial blade slots therethrough positionable adjacent the proximal tibia whereby the blade is guided to perform osteotomies.

16. The instrument of claim 15, wherein the tibial guide further comprises a tibial gauge for measuring the position of the tibial template.

17. The instrument of claim 9, wherein the cutting guide comprises a mount and a pair of cutting arms, the mount mountable to the support, the mount having a rail adapted to support the cutting arms, the cutting arms slidably positionable along the mount and having

cutting surfaces positionable adjacent the distal femur whereby the blade is guided to perform osteotomies.

18. The instrument of claim 17, wherein the cutting guide further comprises a second rail and a cutting block, the second rail positionable parallel to the first rail, the cutting arms slidably positionable along the first and second rails, the cutting block slidably positionable along the second rail between the cutting arms, the cutting block having a femoral blade slot therethrough positionable adjacent the distal femur whereby the blade is guided to perform osteotomies.

19. A surgical instrument for orthopedic resection of a bone, comprising:

(a) an intermedullary support comprising an alignment rod, a plurality of longitudinal roller bearings, and an internal shaft therein, the alignment rod defining a longitudinal axis and having a tapered portion terminating at a first end thereof coaxially insertable into the medullary cavity of the bone and a second end extending beyond the bone, the tapered portion having an outer surface adapted to engage the bone and defining a plurality of longitudinal blade slots therethrough positioned radially thereabout, each roller bearing located in a longitudinal blade slot and movable therein between a collapsed position and an expanded position, the internal shaft axially movable within the rod and adapted to engage the roller bearings, wherein at least a portion of each roller bearing extends a distance beyond the outer surface of the rod in the expanded position, wherein axial advancement of the shaft moves the roller bearings to the expanded position thereby extending the roller bearings into the bone so that the support is anchored therein in coaxial alignment therewith whereby the rod provides a surgical reference point; and

(b) a cutting guide adjustably mountable to the second end of the rod and positionable about an end of the bone, the cutting guide having a plurality of blade slots therethrough, each blade slot adapted to operatively receive a blade whereby the blade is guided to perform osteotomies.

20. The instrument of claim 19, wherein the cutting guide comprises a cutting guide member and a posterior template, the cutting guide member mountable to the support, the posterior template slidably positionable along the cutting guide member, the posterior template

having blade slots therethrough positionable adjacent the bone whereby the blade is guided to perform osteotomies.

21. The instrument of claim 20, wherein the cutting guide further comprises a posterior gauge capable of measuring the position of the posterior template.

22. The instrument of claim 21, wherein the cutting guide further comprises a distal template slidably positionable along the cutting guide member, the distal template having blade slots therethrough positionable adjacent the bone whereby the blade is guided to perform osteotomies.

23. The instrument of claim 22, wherein the cutting guide further comprises a distal gauge capable of measuring the position of the distal template.

24. The instrument of claim 23, wherein the bone is a femur adjacent a tibia, wherein the instrument further comprises a tibial guide mountable to the support, the tibial guide having a plurality of tibial blade slots therethrough adapted to positionably receive a blade whereby the blade is guided to perform osteotomies.

25. The instrument of claim 24, further comprising an elongate body member and a tibial locking arm slidably movable along the body member and adapted to engage the proximal end of the tibia whereby the tibia is secured perpendicular to the femur.

26. The instrument of claim 25, wherein the tibial guide comprises a tibial template slidably positionable along the body member, the tibial template having tibial blade slots therethrough positionable about the proximal tibia whereby the blade is guided to perform osteotomies.

27. The instrument of claim 26, wherein the tibial guide further comprises a tibial gauge for measuring the position of the tibial template.

28. The instrument of claim 19, wherein the cutting guide comprises a mount and a pair of cutting arms, the mount mountable on the support, the cutting arms slidably positionable along the mount, the cutting arms having cutting surfaces positionable adjacent the bone whereby the blade is guided to perform osteotomies.

29. The instrument of claim 28, wherein the cutting guide further comprises a cutting block slidably positionable along the mount, the cutting block having a blade slot therethrough positionable adjacent the bone whereby the blade is guided to perform osteotomies.

30. A method of resectioning a distal end of a femur and a proximal end of an adjacent tibia in preparation for implantation of orthopedic joint replacements, the method comprising the steps of:

- (a) inserting an expandable intermedullary alignment rod into the distal medullary cavity of the femur, the rod having a second end opposite the first end, the second end thereof extending beyond the medullary cavity to provide a surgical reference point;
- (b) expanding the intermedullary alignment rod into the bone whereby the rod is alignable thereto and securable therein;
- (c) mounting a tibial guide having tibial blade slots therethrough to the second end of the rod;
- (d) slidably positioning a locking arm along the tibial guide adjacent the proximal end of the tibia whereby the tibial guide is secured adjacent the tibia and the tibia is secured relative to the femur;
- (e) inserting a surgical blade into the tibial blade slots whereby the blade is guided to perform osteotomies;
- (f) mounting an adjustable cutting guide having femoral blade slots therethrough onto the second end of the rod adjacent the distal end of the femur; and
- (g) inserting the blade into the femoral blade slots whereby the blade is guided to perform osteotomies.

31. The method of claim 30, further comprising the step of reaming the intermedullary cavity so that medullary cavity is adapted to receive the rod.

32. The method of claim 30, wherein the step of inserting a blade into the femoral blade slots comprises inserting a surgical blade into the femoral blade slots whereby the blade is guided to perform femoral osteotomies.

33. The method of claim 30, wherein the step of inserting a blade into the femoral blade slots comprises inserting a surgical blade into the femoral blade slots whereby the blade is guided to perform tibial osteotomies.

34. The method of claim 30, wherein the step of inserting a blade into the femoral blade slots comprises inserting a surgical blade into the femoral blade slots whereby the blade is guided to perform intracondylar notches.

35. The method of claim 30, wherein the step of inserting a blade into the tibial blade slots comprises inserting a surgical blade into the tibial blade slots whereby the blade is guided to perform tibial osteotomies.